

Du'Bois J. Ferguson
Remediation Manager

Schlumberger Oilfield Service
300 Schlumberger Drive
Sugar Land, TX 77478
Tel: 281-285-3692
DFerguson3@slb.com

August 10, 2010

VIA FedEx Overnight

Section Chief
Environmental Enforcement Section
U.S. Department of Justice
PO Box 7611
Washington, DC 20044-7611

Craig Zeller
Remedial Project Manager
Superfund Division
U.S. EPA Region 4
61 Forsyth Street, SW
Atlanta, GA 30303

Re: DOJ Case No. 90-11-2-696/1

Subject: July 2010 Monthly Report
Sangamo Weston/Twelvemile Creek/Lake Hartwell Superfund Site
Natural Resources Trustees Consent Decree

Dear Section Chief:

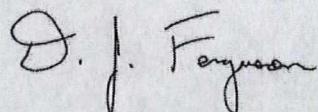
In accordance with the Consent Decree and Section XIV of the Unilateral Administrative Order for the above referenced site, Schlumberger is required to submit Progress Reports on a quarterly basis. Given the current pace of activities, we will be submitting Progress Reports on a monthly basis until further notice in satisfaction of the reporting requirements of the Consent Decree and Unilateral Administrative Order.

In keeping with Paragraph 20 of the Consent Decree:

I certify that the information contained in or accompanying this submission is true, accurate and complete. This certification is based on my personal preparation, review, or analysis of the submission, and/or supervision of persons who, acting on my instructions, made the verification that the submitted information is true, accurate and complete.

If you have any questions, please do not hesitate to contact me at (281) 285-3692.

Sincerely,



DuBois J. Ferguson
Remediation Manager



10979047

U. S. EPA REGION IV

SDMS

POOR LEGIBILITY

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cc: Honorable G. Ross Anderson, Jr.
G. Ross Anderson, Jr. Federal Building
and United States Courthouse
315 South McDuffie Street, 2nd Floor
Anderson, SC 29624

Honorable William W. Wilkins
Nexsen Pruet
55 E. Camperdown Way
Suite 400
Greenville SC 29601

Leon C. Harmon Esq.
Nexsen Pruet
55 E. Camperdown Way
Suite 400
Greenville SC 29601

John Cresswell
Assistant Director
Division of Site Assessment and Remediation
Bureau of Land & Waste Management
SC Department of Health and
Environmental Control
2600 Bull Street
Columbia, SC 29201

Regional Solicitor's Office
U.S. Department of the Interior
Attn: Harriet M. Deal
75 Spring Street, SW Room 304
Atlanta, GA 30303

Diane Beeman & Diane Duncan
Ecological Services Office
U.S. Fish and Wildlife Service
176 Croghan Spur Road, Suite 200
Charleston, SC 29407

Paul League
SC Department of Natural Resources
Office of Chief Counsel
1000 Assembly Street
Columbia, SC 29202

Anthony Rabern
Georgia Department of Natural Resources
3695 Highway 197
Clarkesville, GA 30523

**Office of the Attorney General
Timothy J. Ritzka
Assistant Attorney General
40 Capitol Square SW
Atlanta, GA 30334**

**Jamie Sykes
Richard B. Russell Project Office
4144 Russell Dam Drive
Elberton, GA 30635**

**Frank S. Holleman III
Wyche Burgess Freeman & Parham, P.A.
44 East Camperdown Way
Greenville SC 29601-3591**

**Mr. Paul Doody
ARCADIS
6723 Towpath Road
Syracuse, NY 13214-0066**

**Mr. John N. Hanson
Beveridge & Diamond, P.C.
1350 I Street, N.W.
Suite 700
Washington, D.C. 20005-3311**

July 2010 Monthly Report
Sangamo Weston/Twelvemile Creek/Lake Hartwell Superfund Site
Operable Unit 2

Activities Initiated/Completed

- Initiated and completed construction of additional Geotube pad and placement of additional Geotubes.
- Installed a larger SMU pond dredge to facilitate removal of accumulated residual material in the SMU Pond.
- Completed placement, sampling, and verification of 24" Protective Layer/sand material in SMU.
- Completed SMU protective layer and as-built survey of SMU protective layer.
- Dredge Clare has progressed approximately to Station 0+50 (Woodside I Impoundment), and dredge Kami has progressed approximately to Station 43+75 (Woodside II Impoundment).
- June 30, 2010, Taylor Engineering, John Adams and Special Receiver, Leon Harmon were onsite to review work progress and construction procedures from Station 25+00 to Station 35+00.
- July 15, 2010, Anna Simon, from the Greenville news was onsite with a photographer.
- July 15, 2010, SCDHEC representative, Greg Cassidy was onsite to perform a site inspection.
- July 21, 2010, a SCDHEC Solid Waste Management Regional personnel Bill Rampey was onsite for a general visit/inspection and performed a Class Three Landfill Inspection in accordance with Regulation 61-107.19, Part V. The completed Inspection Form is provided as Attachment 1.
- Groundwater well sampling was performed by Rogers and Callcott Engineers, Inc. from July 2 through July 6, 2010.

Results of Sampling, Tests, and Other Data

- Collected post-dredge survey data in Twelvemile Creek in 100 foot interval sections. Information from the first three 500 foot sections from the Woodside II impoundment has been submitted to the Special Receivers in accordance with the Dredge Verification Plan.
- Sampling and analysis is being conducted relative to the creek turbidity, and water treatment system effluent water. Results for the effluent water are attached (Attachment 2) and the continuous turbidity monitoring data is available onsite.
- Project photographs are included as Attachment 3.

Plans, Reports, and other Deliverables

- Analytical data related to samples collected from the SMU site by Rogers and Callcott Engineers, Inc. to assess water treatment effluent water were submitted to SCDHEC in the June Monthly Report (submitted July 28, 2010) in Attachment 2.

Work Planned for August 2010

- Continue sediment dredging activities in the WS I and WS II impoundments.
- Continue dredge verification surveys with submittal of each 500' foot section to the Special Receivers and their consultant.

Problems Encountered, Anticipated Delays, Solutions

- None at this time.

ARCADIS

Attachment 1



Class Three Landfill Inspection Form
Regulation 61-107.19, Part V

Facility Name: 12 MILE CREEK REST PROJECT Date/Time of Inspection 21 JUL 12

County: PICKENS Permit #:

Reason for Inspection: Routine: Follow-up: Complaint: Other:

Current Weather Conditions: Clear, 3kms

Previous 24-hours: Rain If yes, amount _____ inches; High winds

1 - Meets or exceeds regulatory requirements; 2A - Improvement needed (minor issues exist; corrective measures recommended); 2B - Improvement needed (moderate issues exist; corrective action required and scheduled); 3 - Unacceptable (serious issues exist and/or recurring issues with minimal or no corrective action taken - alleged regulatory or permit condition violations have occurred - enforcement referral required); Y - Yes; Meets or exceeds regulatory requirements; N - No; Corrective measures recommended that should be fixed by the next inspection or an agreed upon completion date; NA - Not applicable; NI - Not Inspected

Procedures for Excluding Receipt of Unapproved Waste (258.20)

1. Overall effectiveness of Special Waste Analysis and Implementation Plan (SWAIP).
2. Trained waste screener present.
3. Random daily load inspections conducted and documented.
4. Records of unacceptable waste maintained.
5. Personnel training program on recognition of regulated hazardous waste and PCB waste.
6. Record of Notification to Department within 72 hours of hazardous or PCB waste receipt.
7. Unauthorized wastes removed from working face by the end of the operating day.

Cover Material Requirements (258.21)

8. > 6" soil (short-term cover).
9. Alternate Daily Cover (ADC).
10. > 6" soil (long-term and/or intermediate cover).
11. Adequate soil quantity available for cover.

Control of (258.21, 22, 24, 25 and 37):

12. Blowing litter.
13. Off-site odors.
14. Disease vectors.
15. Fires/Open burning.
16. Scavenging.

Access Requirements (258.25)

17. Condition of access controls.
18. Condition of all weather roads -- entrance.
19. Condition of all weather -- internal haul roads.

Run-on/Run-off Controls (258.26)

20. Condition of ditches/swales.
21. Condition of berms/terraces/downchutes.
22. Condition of sedimentation ponds.

Leachate Seeps (258.26 and 27)

23. Leachate seep management.

Liquid Restrictions (258.28)

24. Free of unauthorized bulk or non-containedized liquids.

Record Keeping Requirements (258.29)

25. Required records are maintained in the landfill's operating record.

Name of those present during the inspection: DAT Dougherty

Comments: NO PROBLEMS NOTED DURING INSPECTION

Inspection Item	Corrective action required	Date to be completed

Cover Material Requirements (258.21)

8. 6" soil (short-term cover)
9. Alternate Daily Cover (ADC)
10. ≥ 6" soil (long-term and/or intermediate cover)
11. Y/N NA/NI Adequate soil quantity available for cover

Control of (258.21, 22, 24, 25 and 37):

12. Blowing litter

13. Off-site odors

14. Disease vectors

15. Fires/Open burning

16. Scavenging

Access Requirements (258.25):

17. Condition of access controls

18. Condition of all weather roads - entrance

19. Condition of all weather - internal haul roads

Run-on/Run-off Controls (258.26):

20. Condition of ditches/swales

21. Condition of berms/terraces/downchutes

22. Condition of sedimentation ponds

Leachate Seeps (258.25 and 27):

23. Leachate seep management

Liquid Restrictions (258.29):

24. N/A Free of unauthorized bulk or non-containerized liquids

Record Keeping Requirements (258.29):

25. Y/N NA/NI Required records are maintained in the landfill's operating record

MW

X5

X3

X2

X1

Leachate Recirculation System (258.29 and 30):

32. Leachate recirculation system management
33. Y/N NA/NI Required leachate recirculation report data contained in the landfill's operating record

34. Leachate seep management

35. Leachate collection system management

Testing of Municipal Solid Waste (MSW) Incinerator Ash (258.35):

36. Y/N NA/NI MSW incinerator ash management

Site Sealments (258.36):

37. Y/N NA/NI Required seal provided

Condition of Monitoring Wells (258.31):

38. Monitoring well maintenance program

Working Face/Elevation (258.37):

39. Y/N NA/NI Method of elevation control with benchmark

Plans and Permit (Permit):

40. Y/N NA/NI Operating in accordance with approved plans and general permit

41. Y/N NA/NI Permitted engineering drawings available

42. Y/N NA/NI Permitted operational plan available

43. Y/N NA/NI Permitted stabilization/landscaping plan available

44. Y/N NA/NI Permitted contingency plan available

45. Y/N NA/NI Permitted approved groundwater monitoring plan available

46. Y/N NA/NI Permitted closure plan available

47. Y/N NA/NI Permitted post-closure plan available

Name of those present during the inspection:

PAT Dougher

Comments: NO PROBLEMS NOTED DURING INSPECTION

Inspection Item	Corrective action required	Date to be completed

Additional comment page: Y/N

Photos taken: Y/N

The signature below certifies that the SCDHEC Inspector has personally checked each item and has answered according to the true condition existing at the time of inspection.


Facility Representative


SCDHEC Inspector

DNRC 3891 (08/2008)

SOUTH CAROLINA DEPARTMENT OF HEALTH AND ENVIRONMENTAL CONTROL

Online (WMS) • SCDHEC WMS Copy (PDF) • Facility Copy (PDF) • Regional EGIS Office

ARCADIS

Attachment 2



Mr. Dale Stoudemire, Manager
South Carolina Department of Health and Environmental Control
Bureau of Water/Water Pollution Control Division
Data Management Section
2600 Bull Street
Columbia, South Carolina 29201

ARCADIS
6723 Towpath Road
P.O. Box 66
Syracuse
New York 13214-0066
Tel 315.448.9120
Fax 315.449.0017
www.arcadis-us.com

ENVIRONMENTAL

Subject:
Schlumberger Technology Corporation, Twelvemile Creek Restoration Project
Pickens County, South Carolina
June 2010 Sampling Results Report

Date:
July 28, 2010

Dear Mr. Stoudemire:

On behalf of Schlumberger Technology Corporation (STC), ARCADIS is providing a summary of sampling results for the Twelvemile Creek Restoration Project in Pickens County for the month of June 2010 in accordance with the October 15, 2009 letter from Butch Swygent of South Carolina Department of Health and Environmental Control (SCDHEC) to Chris Moody of ARCADIS and the March 11, 2010 SCDHEC construction operation approval memorandum.

Table 1 contains the daily discharge information from the water treatment plant to Twelvemile Creek. This data is recorded onsite and is reviewed by Rogers & Callcott South Carolina certified water treatment plant operator. The maximum daily discharge for June 2010 was 5.64 million gallons per day (MGD) on June 11. Discharge to the creek was recorded on 26 days of the month with an average discharge of 4.28 MGD.

Table 2 contains the results of the analyses described in Table 1 of the October 15, 2009 letter that were performed on the water treatment plant effluent during the month of June 2010. The Laboratory Services Reports from Rogers & Callcott Laboratory Services related to these tests are provided in Attachment A. The samples were analyzed for pH, temperature, total suspended solids and PCBs. The results of all parameters are within the ranges mentioned in the October 15, 2009 letter.

Contact:
Lance S. Ketcham

Phone:
315.671.9163

Email:
Lance.Ketcham@arcadis-us.com

Our ref:
MT001019

Imagine the result

ARCADIS

Mr. Dale Stoudemire
July 28, 2010

Table 3 summarizes the results of the whole effluent toxicity (WET) testing; the Laboratory Services Reports for these tests are provided in Attachment B. Results of the WET testing are within the ranges mentioned in the October 15, 2009 letter.

If you have any questions on the above, please feel free to contact me.

Sincerely,

ARCADIS



**Lance S. Ketcham
Senior Engineer/Manager**

Copies:

**Melinda Vickers, SCDHEC
Eric Kim, SCDHEC
Du'Bols J. Ferguson, STC
Gary Odom, STC
Paul Doody, ARCADIS**

**Page:
2/2**

ARCADIS

Tables

Table 1. Daily Discharge from Water Treatment Plant for June 2010, Twelvemile Creek Restoration Project, Pickens County

Date	Discharge, MGD
Monthly Avg.¹	MR
Daily Max.¹	MR
6/1/2010	3.77
6/2/2010	2.30
6/3/2010	3.50
6/4/2010	4.19
6/5/2010	4.04
6/6/2010	NR
6/7/2010	3.96
6/8/2010	2.06
6/9/2010	3.65
6/10/2010	4.76
6/11/2010	5.64
6/12/2010	4.09
6/13/2010	NR
6/14/2010	4.38
6/15/2010	4.88
6/16/2010	5.06
6/17/2010	3.87
6/18/2010	4.55
6/19/2010	4.69
6/20/2010	NR
6/21/2010	4.25
6/22/2010	5.15
6/23/2010	5.20
6/24/2010	4.91
6/25/2010	4.82
6/26/2010	5.07
6/27/2010	NR
6/28/2010	3.41
6/29/2010	4.82
6/30/2010	4.33
Total	111.35
Days discharged	26
Average	4.28

Notes:

1. Data is from onsite records detailing the daily discharge volumes to Twelvemile Creek.
2. Data collected by Rogers & Callcott.
3. The bolded value is the maximum daily discharge recorded.

Superscript Notes:

¹ Discharge reporting guidelines are outlined in the 10/15/2009 letter from Butch S wygert (South Carolina Department of Health and Environmental Control) to Chris Moody (ARCADIS)

Acronyms and Abbreviations:

Avg. - average

Max. - maximum

MGD - million gallons per day

MR - monitor and report

NR - not recorded

Table 2. Effluent Sampling Result for June 2010. Twelvemile Creek Restoration Project, Pickens County

Sample ID	Location	Sample Type	Week	Sample Date and Time	pH	Temp. (°C)	TSS (mg/L)	PCB (µg/L)						
								PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260
Monthly Avg. ¹	—	—	—	—	6.0 to 8.5	—	25	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Daily Max. ¹	—	—	—	—	6.0 to 8.5	—	45	0.5	0.5	0.5	0.5	0.5	0.5	0.5
AC79954	WTP Effluent Discharge	G	1	6/2/10 9:15	6.6	24.8	NA	NA	NA	NA	NA	NA	NA	NA
AC79955	WTP Effluent Discharge	C		6/2/10 9:10	NA	NA	13	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
AC80323	WTP Effluent Discharge	G	2	6/8/10 9:25	6.6	25.6	NA	NA	NA	NA	NA	NA	NA	NA
AC80324	WTP Effluent Discharge	C		6/8/10 9:20	NA	NA	4.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
AC80778	WTP Effluent Discharge	G	3	6/15/10 9:30	6.3	28.0	NA	NA	NA	NA	NA	NA	NA	NA
AC80779	WTP Effluent Discharge	C		6/15/10 9:25	NA	NA	2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
AC81016	WTP Effluent Discharge	G	4	6/22/10 9:00	6.6	27.2	NA	NA	NA	NA	NA	NA	NA	NA
AC81017	WTP Effluent Discharge	C		6/22/10 8:55	NA	NA	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
AC81342	WTP Effluent Discharge	G	5	6/29/10 9:05	6.3	26.9	NA	NA	NA	NA	NA	NA	NA	NA
AC81343	WTP Effluent Discharge	C		6/29/10 9:00	NA	NA	4.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Average						6.5	26.5	5.1	—	—	—	—	—	—

Notes:

- Sampling results compiled from Laboratory Services Reports provided by Rogers & Calicot Laboratory Services and submitted in tabular form as required per the 10/15/2009 letter from Butch Swygert (South Carolina Department of Health and Environmental Control) to Chris Moody (ARCADIS) and the 3/11/2010 SCDHEC construction and operational approval memorandum.
- The monthly average includes non-detect readings (indicated by "<") and assumes a value equal to the detection limit. Monthly averages are not calculated for parameters without a detected concentration (indicated by "-").

Superscript Note:

¹Discharge reporting guidelines and limits are outlined in the 10/15/2009 letter from Butch Swygert (South Carolina Department of Health and Environmental Control) to Chris Moody (ARCADIS)

Acronyms and Abbreviations:

°C - degrees centigrade

G - grab sample

C - 24-hour composite sample

ID - identification

µg/L - micrograms/liter

MGD - million gallons per day

mg/L - milligrams per liter

NA - not analyzed

PCB - polychlorinated biphenyl

Temp. - temperature

Table 3. Whole Effluent Toxicity Result for June 2010, Twelvemile Creek Restoration Project, Pickens County

WET Analysis	Monthly Avg.¹	Daily Max.¹	Results
<i>Ceriodaphnia dubia</i> Chronic WET @ CTC=17.4%	25%	40%	8.6%
<i>Ceriodaphnia dubia</i> Chronic WET-Reproduction @ CTC=17.4%	MR, %	MR, %	8.6%
<i>Ceriodaphnia dubia</i> Chronic WET-Survival @ CTC=17.4%	MR, %	MR, %	3.3%
<i>Ceriodaphnia dubia</i> Acute WET @ ATC=35.5%	—	0 ²	0

Notes:

1. Samples collected by Rogers & Callcott on 6/2, 6/4, and 6/5/2010. One composite sample was collected each day (sample numbers AC79953, AC80182, and AC80183, respectively) to complete the Chronic WET testing. Sample AC79953 was used in the Acute WET testing. Samples were analyzed by ETT.

Superscript Notes:

¹ Discharge reporting guidelines and limits are outlined in the 10/15/2009 letter from Butch Swygert (South Carolina Department of Health and Environmental Control) to Chris Moody (ARCADIS)

² A results of "0" indicates a passing result.

Acronyms and Abbreviations:

MR - monitor and report

WET - whole effluent toxicity

ARCADIS

Attachments

ARCADIS

Attachment A

**Laboratory Services Report:
October 15, 2009 Table 1
Analyses**



**ROGERS & CALLCOTT
LABORATORY SERVICES**

P.O. Box 5655, Greenville, SC 29606
Phone: (864) 232-1556 - FAX: (864) 232-6140

AN EMPLOYEE-OWNED COMPANY

Laboratory Services Report

Client: Schlumberger Technology Corporation
Sangamo - Twelve Mile Creek Project
Attention Gary Odom by email

Date Received: 06/02/2010

South Carolina Laboratory Identification 23105

Time Received: 11:30

North Carolina Laboratory Certificate Number 27

Date Reported: 06/04/2010

NELAP Laboratory Identification E87822

Sample Number

Sample Description



AC79954 Schlumberger Technology TMC Water Treatment Plant Effluent Discharge grab,
collected on 06/02/2010 at 09:15



AC79955 Schlumberger Technology TMC Water Treatment Plant Effluent Discharge
composite, collected on 06/02/2010 at 09:10

The attached report is for the samples that were received and are referenced above. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements of the NELAC standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty available upon request.

We appreciate the opportunity to be of service to you. Please contact us at (864) 232-1556 should you have any questions about this report.

Results released by:

Anne Dennis
authorized signature

Results reviewed by:

CJA

Carbon copy: Email to L Ketcham P Dougher A Kohler S Cary

This report may not be reproduced, except in full, without written permission from Rogers & Callcott, Inc.

<u>Sample Number</u>	<u>Sample Description, Date and Time Collected</u>						
<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Flag</u>	<u>RDL</u>	<u>Date/Time</u>	<u>Analyst</u>	<u>Method</u>
ACT79954		Schlumberger Technology TMC Water Treatment Plant Effluent Discharge grab, collected on 06/02/2010 at 09:15					
pH (Field)	6.6	pH units		0.1	06/02/2010 09:15	LRW	SM 4500HB
Temperature (Field)	24.8	degrees C		0.1	06/02/2010 09:15	LRW	SM 2550B
<u>Sample Number</u>	<u>Sample Description, Date and Time Collected</u>						
ACT79955	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge composite, collected on 06/02/2010 at 09:10						
<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Flag</u>	<u>RDL</u>	<u>Date/Time</u>	<u>Analyst</u>	<u>Method</u>
24 hr Composite Sampling	Completed				06/02/2010 09:10	LRW	Composite
Total Suspended Solids	13	mg/l		2.0	06/02/2010 13:10	MLR	SM 2540D
Polychlorinated Biphenyls (PCBs)							
PCB-1018	<RDL	ug/l		0.5	06/03/2010 17:09	RKH	EPA 608
PCB-1221	<RDL	ug/l		0.5	06/03/2010 17:09	RKH	EPA 608
PCB-1232	<RDL	ug/l		0.5	06/03/2010 17:09	RKH	EPA 608
PCB-1242	<RDL	ug/l		0.5	06/03/2010 17:09	RKH	EPA 608
PCB-1248	<RDL	ug/l		0.5	06/03/2010 17:09	RKH	EPA 608
PCB-1254	<RDL	ug/l		0.5	06/03/2010 17:09	RKH	EPA 608
PCB-1260	<RDL	ug/l		0.5	06/03/2010 17:09	RKH	EPA 608
2,4,6,8-Tetrachloro-m-xylene, (Surrogate)	92	%		0	06/03/2010 17:09	RKH	EPA 608
Decachlorobiphenyl, (Surrogate)	95	%		0	06/03/2010 17:09	RKH	EPA 608
Liquid-Liquid Extraction Pest/PCB 608	Completed				06/02/2010 12:15	DBB	EPA 608



ROGERS & CALLCOTT LABORATORY SERVICES

P.O. Box 5655, Greenville, SC 29606
Phone (864) 232-1556 Fax (864) 232-6140
Shipping Address: 426 Fairforest Way
Greenville, SC 29607

Client Name SCHLUMBERGER
Address _____
Report To: _____
Telephone No. _____ FAX No. _____
PO No. _____ Project No. JMC

Rogers & Callcott Lab No.	Yr/10 Date	Time	Sample Description	Total Number of Containers	PARAMETERS	TSS	PCB
AC 79955	6/2	0910	WATER TREATMENT PLANT EFF. DISCHARGE	2	1	1	N

SAMPLER ① <u>Randy May</u> Relinquished by (Sig.)	Date/Time 6/2/10 1130	Received by (Sig.) ② <u>R</u> Shipper Name & #	Date/Time 6/2/10 1130	KNOWN HAZARDS ASSOCIATED WITH SAMPLES		
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④	Date/Time			
Relinquished by (Sig.) ⑤	Date/Time	Received by (Sig.) ⑥	Date/Time	Temperature of blank or representative sample		
Seal #	at'chd by	Recvd. Intact by	Seal #	at'chd by	Recvd. Intact by	At time of collection <u>3.1</u> °C
						At time of lab receipt <u>2.7</u> °C

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

N N	Filtered (Yes/No)
Y Y	Cooled (Yes/No)
P G	Container Type (P/G)
YC2KL	Container Volume
C C	Sample Type (Grab/Composite)
NN/NW	Sample Source (WW, GW, DW, Other)
NR/Neg	Sample Source Chlorinated (Yes/No)
NR/7	Lab Receipt Cl ₄ Check <u>meas</u> / <u>12-2-10</u>
A A	Lab Receipt pH Check
	Preserved (Code)
	A-None D-NaOH G-Boric Acid B-HNO ₃ E-HCL H-Ascorbic Acid C-H ₂ SO ₄ F-Na,S,O, I-_____

COMMENTS:

Sample is set out c. 0910
on 6/1/10 Time prop
By R+G
AC 19954
pH 6.6 Grab taken + rem'd
Temp 24.9 c. 0915
on 6/2/10 By R+G



**ROGERS & CALLCOTT
LABORATORY SERVICES**

P.O. Box 5655, Greenville, SC 29606
④ Phone: (864) 232-1556 - FAX: (864) 232-6140

AN EMPLOYEE-OWNED COMPANY

Laboratory Services Report

Client: Schlumberger Technology Corporation
Sangamo - Twelve Mile Creek Project
Attention Gary Odom by email

Date Received: 06/08/2010

South Carolina Laboratory Identification 23105

Time Received: 11:25

North Carolina Laboratory Certificate Number 27

Date Reported: 06/10/2010

NELAP Laboratory Identification E87822

Sample Number

Sample Description



AC80323 Schlumberger Technology TMC Water Treatment Plant Effluent Discharge grab,
collected on 06/08/2010 at 08:26



AC80324 Schlumberger Technology TMC Water Treatment Plant Effluent Discharge
composite, collected on 06/08/2010 at 09:20

The attached report is for the samples that were received and are referenced above. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements of the NELAC standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty available upon request.

We appreciate the opportunity to be of service to you. Please contact us at (864) 232-1556 should you have any questions about this report.

Results released by:

authorized signature

Results reviewed by:

Carbon copy: Email to L Ketcham P Dougher A Kohler S Cary

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<u>Sample Number</u>	<u>Sample Description, Date and Time Collected</u>						
<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Flag</u>	<u>RDL</u>	<u>Date/Time</u>	<u>Analyst</u>	<u>Method</u>
AC80323	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge grab, collected on 06/08/2010 at 09:25	6.8	pH units	0.1	06/08/2010 09:25	LRW	SM 4600HB
Temperature (Field)	25.6	degrees C		0.1	06/08/2010 09:25	LRW	SM 2650B
<u>Sample Number</u>	<u>Sample Description, Date and Time Collected</u>						
AC80324	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge composite, collected on 06/08/2010 at 09:20						
<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Flag</u>	<u>RDL</u>	<u>Date/Time</u>	<u>Analyst</u>	<u>Method</u>
24 hr Composite Sampling	Completed				06/08/2010 09:20	LRW	Composite
Total Suspended Solids	4.0	mg/l		2.0	06/08/2010 12:26	MLR	SM 2540D
Polychlorinated Biphenyls (PCBs)							
PCB-1016	< RDL	ug/l		0.5	06/09/2010 19:04	RKH	EPA 608
PCB-1221	< RDL	ug/l		0.5	06/09/2010 19:04	RKH	EPA 608
PCB-1232	< RDL	ug/l		0.5	06/09/2010 19:04	RKH	EPA 608
PCB-1242	< RDL	ug/l		0.5	06/09/2010 19:04	RKH	EPA 608
PCB-1248	< RDL	ug/l		0.5	06/09/2010 19:04	RKH	EPA 608
PCB-1254	< RDL	ug/l		0.5	06/09/2010 19:04	RKH	EPA 608
PCB-1260	< RDL	ug/l		0.5	06/09/2010 19:04	RKH	EPA 608
2,4,5,6-Tetrachloro-m-xylene, (Surrogate)	98	%		0	06/09/2010 19:04	RKH	EPA 608
Decachlorobiphenyl, (Surrogate)	101	%		0	06/09/2010 19:04	RKH	EPA 608
Liquid-Liquid Extraction Pest/PCB 608	Completed				06/08/2010 12:30	DBB	EPA 608



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Client Name Schlumberger

Address _____

Report To: _____

Telephone No. _____ FAX No. _____

PO No. _____ Project No. TMC

Rogers & Callcott Lab No.	Yr/ Date	Time	Sample Description	Total Number of Containers
AC 80324	6/8	0920	WATER TREATMENT PLANT EFF. DISCHARGES	3

SAMPLER Relinquished by (Sig.) <u>① Karpin Way</u>	Date/Time <u>6/8/10 1125</u>	Received by (Sig.) <u>② Karpin</u> Shipper Name & #	Date/Time <u>6/8/10 1125</u>
Relinquished by (Sig.) <u>③</u>	Date/Time 	Received by (Sig.) <u>④</u> Shipper Name & #	Date/Time
Relinquished by (Sig.) <u>⑤</u>	Date/Time 	Received by (Sig.) <u>⑥</u> Shipper Name & #	Date/Time

Seal # at'chd by Recvd. Intact by

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

				Filtered (Yes/No)
				Cooled (Yes/No)
				Container Type (P/G)
				Container Volume
				Sample Type (Grab/Composite)
				Sample Source (WW, GW, DW, Other)
				Sample Source Chlorinated (Yes/No)
				Lab Receipt Cl. Check <u>mcg</u> <u>16-8-10</u>
				Lab Receipt pH Check
				Preserved (Code)
				A-None D-NaOH G-Boric Acid B-HNO ₃ E-HCL H-Ascorbic Acid C-H ₂ SO ₄ F-Na ₂ S ₂ O ₃ I-_____
				COMMENTS:
				<u>Sample Set out @ 0920</u> <u>6/8/10, Time proportional</u> <u>by R/C</u>
				<u>AC 80323</u> <u>pH 6.6 Grab taken &</u> <u>TDS 75.6 Read @ 0925</u> <u>on 6/8/10 by R/C</u>
				KNOWN HAZARDS ASSOCIATED WITH SAMPLES <u>SUFFICIENT SAMPLE TAKEN</u> <u>FOR FIELD DUPLICATES</u>
				Temperature of blank or representative sample At time of collection <u>3.0 °C</u> At time of lab receipt <u>5.6 °C</u>

Form Revised July 2008

R/C COC FORM



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Laboratory Services Report

Client: Schlumberger Technology Corporation
Sangamo - Twelve Mile Creek Project
Attention Gary Odom by email

Date Received: 06/15/2010

South Carolina Laboratory Identification 23105

Time Received: 12:55

North Carolina Laboratory Certificate Number 27

Date Reported: 06/17/2010

NELAP Laboratory Identification E87822

Sample Number

Sample Description



AC80778 Schlumberger Technology TMC Water Treatment Plant Effluent Discharge grab,
collected on 06/15/2010 at 09:30



AC80779 Schlumberger Technology TMC Water Treatment Plant Effluent Discharge
composite, collected on 06/15/2010 at 09:25

The attached report is for the samples that were received and are referenced above. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements of the NELAC standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty available upon request.

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<u>Sample Number</u>	<u>Sample Description, Date and Time Collected</u>						
<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Flag</u>	<u>RDL</u>	<u>Date/Time</u>	<u>Analyst</u>	<u>Method</u>
pH (Field)	6.3	pH units		0.1	06/16/2010 09:30	LRW	SM 4500B
Temperature (Field)	28.0	degrees C		0.1	06/16/2010 09:30	LRW	SM 2550B
<u>Sample Number</u>	<u>Sample Description, Date and Time Collected</u>						
AC80779	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge grab, collected on 06/16/2010 at 09:30						
<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Flag</u>	<u>RDL</u>	<u>Date/Time</u>	<u>Analyst</u>	<u>Method</u>
24 hr Composite Sampling	Completed				06/16/2010 09:25	LRW	Composite
Total Suspended Solids	2.0	mg/l		2.0	06/16/2010 14:00	SGM	SM 2540D
Polychlorinated Biphenyls (PCBs)							
PCB-1018	< RDL	ug/l		0.5	06/16/2010 17:27	RKH	EPA 608
PCB-1221	< RDL	ug/l		0.5	06/16/2010 17:27	RKH	EPA 608
PCB-1232	< RDL	ug/l		0.5	06/16/2010 17:27	RKH	EPA 608
PCB-1242	< RDL	ug/l		0.5	06/16/2010 17:27	RKH	EPA 608
PCB-1248	< RDL	ug/l		0.5	06/16/2010 17:27	RKH	EPA 608
PCB-1254	< RDL	ug/l		0.5	06/16/2010 17:27	RKH	EPA 608
PCB-1260	< RDL	ug/l		0.5	06/16/2010 17:27	RKH	EPA 608
2,4,5,6-Tetrachloro-m-xylene, (Surrogate)	101	%		0	06/16/2010 17:27	RKH	EPA 608
Decachlorobiphenyl, (Surrogate)	104	%		0	06/16/2010 17:27	RKH	EPA 608
Liquid-liquid Extraction Pest/PCB 608	Completed				06/16/2010 08:40	DBB	EPA 608



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Client Name Schlumberger

Address _____

Report To: _____

Telephone No. _____ FAX No. _____

PO No. _____ Project No. JMC

Rogers & Callcott Lab No.	Yr/ Date	Time	Sample Description
AC 80779	6/15/10	0925	WATER TREATMENT PLANT EFF. DISCHARGE

Total Number of Containers	PARAMETERS	N N			Filtered (Yes/No)		
		V	Y	P	G	Cooled (Yes/No)	
2	Y S	PCB	N	G	Container Type (P/G)		
					Container Volume		
					Sample Type (Grab/Composite)		
					Sample Source (WW, GW, DW, Other)		
					Sample Source Chlorinated (Yes/No)		
					Lab Receipt Cl ₂ Check <u>mcg</u>		
					Lab Receipt pH Check <u>6-16-10</u>		
					Preserved (Code)		
					A-None D-NaOH G-Boric Acid B-HNO ₃ E-HCL H-Ascorbic Acid C-H ₂ SO ₄ F-Na ₂ S ₂ O ₃ I-_____		
					COMMENTS:		
					Sample set out @ 0925 6/14/10, time proportional by RTC		
					AC 80778		
					pH 6.3 Grab taken + Temp 28.9 Read @ 0930 on 6/15/10 by RTC		
					KNOWN HAZARDS ASSOCIATED WITH SAMPLES		
					Temperature of blank or representative sample		
					At time of collection <u>4.6</u> °C		
					At time of lab receipt <u>3.2</u> °C		
					R/C COC FORM		

Form Revised July 2008



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Laboratory Services Report

Client: Schlumberger Technology Corporation
Sangamo - Twelve Mile Creek Project
Attention Gary Odom by email

Date Received: 06/22/2010

South Carolina Laboratory Identification 23105

Time Received: 13:00

North Carolina Laboratory Certificate Number 27

Date Reported: 06/24/2010

NELAP Laboratory Identification E87822

Sample Number

Sample Description



AC81016 Schlumberger Technology TMC Water Treatment Plant Effluent Discharge grab,
collected on 06/22/2010 at 09:00



AC81017 Schlumberger Technology TMC Water Treatment Plant Effluent Discharge
composite, collected on 06/22/2010 at 08:56

The attached report is for the samples that were received and are referenced above. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements of the NELAC standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty available upon request.

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Results released by:

Amy J. Aghely

authorized signature

Results reviewed by:

SJ

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EXPLANATION OF REPORT SYMBOLS AND ABBREVIATIONS

The following defines common symbols and abbreviations used in reporting technical data:

<	Less than
>	Greater than
mg/L, mg/kg	Units of concentration in milligrams per liter for liquids, and milligrams per kilogram for solids. Also referred to as parts per million or "ppm".
µg/L, µg/kg	Units of concentration in micrograms per liter for liquids, and micrograms per kilogram for solids. Also referred to as parts per billion or "ppb".
RDL	Reported detection limit
CFU	Colony forming unit
TNTC	Too numerous to count
MSL	Mean sea level
NTU	Nephelometric turbidity units
µmhos/cm	Units of specific conductance expressed in micromhos per centimeter
°C, °F	Units of temperature expressed in degrees Celsius or degrees Fahrenheit.
mgd, gpd	Measure of flow in million gallons per day (mgd) or gallons per day (gpd).
Surrogate	Compound added by the laboratory for quality control monitoring.
Data Qualifiers:	
J	Estimated value
Q	Laboratory specific qualifier - refer to case narrative or client notification form.
K	The sample was analyzed beyond the accepted holding time.
B	Analyte was also detected in the method blank.
X	Result subject to sample matrix interference. Reported detection limit has been adjusted where applicable.
Z	Defined in comments. If there are multiple comments, the "Z" may be followed by a number designation.
E	Estimated value - the analyte was detected at concentrations greater than the calibration range.
S	The matrix spike and / or matrix spike duplicate sample recovery was not within control limits.
SI	The matrix spike and / or matrix spike duplicate sample recovery was not within control limits due to matrix interference.
P	The RPD between the sample / duplicate or matrix spike / spike duplicate was not within quality control limits.
PI	The RPD between the sample / duplicate or matrix spike / spike duplicate was not within quality control limits due to sample matrix interference.
R	The surrogate was not within quality control limits.
R1	The surrogate was not within quality control limits due to matrix interference.
L	The analyte in the LCS was not within control limits.
D	Due to a discrepancy between the BOD and COD results, the BOD has been reported as less than the COD value.
A	Reporting limit has been adjusted due to limited sample volume.

LIMITATION OF LIABILITY - The accuracy of all analytical results is for the sample as is received by the laboratory. The integrity of the sample begins at the time it is placed in the possession of authorized Rogers and Callcott Engineers, Inc. laboratory personnel. All warranties, expressed, or implied, are disclaimed. Liability is limited to the cost of the analyses.

SAMPLE RETURN POLICY - Rogers and Callcott Engineers, Inc. reserves the right to charge a sample disposal fee or to return samples to the client.

<u>Sample Number</u>	<u>Sample Description, Date and Time Collected</u>						
<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Flag</u>	<u>RDL</u>	<u>Date/Time</u>	<u>Analyst</u>	<u>Method</u>
AC81016 pH (Field)	6.6	pH units		0.1	06/22/2010 09:00	LRW	SM 4600HB
Temperature (Field)	27.2	degrees C		0.1	06/22/2010 09:00	LRW	SM 2550B
<u>Sample Number</u>	<u>Sample Description, Date and Time Collected</u>						
AC81017	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge grab, collected on 06/22/2010 at 08:55						
<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Flag</u>	<u>RDL</u>	<u>Date/Time</u>	<u>Analyst</u>	<u>Method</u>
24 hr Composite Sampling	Completed				06/22/2010 08:55	LRW	Composite
Total Suspended Solids	<RDL	mg/l		2.0	06/22/2010 14:20	MLR	SM 2540D
Polychlorinated Biphenyls (PCBs).							
PCB-1016	< RDL	ug/l		0.5	06/23/2010 14:46	RKH	EPA 608
PCB-1221	< RDL	ug/l		0.5	06/23/2010 14:46	RKH	EPA 608
PCB-1232	< RDL	ug/l		0.5	06/23/2010 14:46	RKH	EPA 608
PCB-1242	< RDL	ug/l		0.5	06/23/2010 14:46	RKH	EPA 608
PCB-1248	< RDL	ug/l		0.8	06/23/2010 14:46	RKH	EPA 608
PCB-1254	< RDL	ug/l		0.6	06/23/2010 14:46	RKH	EPA 608
PCB-1260	< RDL	ug/l		0.5	06/23/2010 14:46	RKH	EPA 608
2,4,5,6-Tetrachloro-m-xylene, (Surrogate)	98	%		0.00	06/23/2010 14:46	RKH	EPA 608
Decachlorobiphenyl, (Surrogate)	93	%		0.00	06/23/2010 14:46	RKH	EPA 608
Liquid-Liquid Extraction/Pest/PCB 608	Completed				06/22/2010 13:30	DBB	EPA 608



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Client Name Scitulum BER
Address _____
Report To: _____
Telephone No. _____ FAX No. _____
PO No. _____ Project No. Tmc

Rogers & Callcott Lab No.	Yr. <u>10</u> Date	Time	Sample Description
AC 81017	6/22	0855	WADW TREATMENT plant EFFLUENT DISCHARGE

SAMPLER Relinquished by (Sig.) <u>Raymond</u>	Date/Time 6/22/10 1300	Received by (Sig.) ② <u>Norma Salley</u> Shipper Name & #	Date/Time 6/22/10 1300
Relinquished by (Sig.) ③	Date/Time 	Received by (Sig.) ④ Shipper Name & #	Date/Time
Relinquished by (Sig.) ⑤	Date/Time 	Received by (Sig.) ⑥ Shipper Name & #	Date/Time

Seal # at'chd by Recvd. Intact by Seal # at'chd by Recvd. Intact by

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

Total Number of Containers	N N		Filtered (Yes/No)
	Y Y		Cooled (Yes/No)
	P/G		Container Type (P/G)
	1/2 1/2		Container Volume
	C C		Sample Type (Grab/Composite)
	WW/GW		Sample Source (WW, GW, DW, Other)
	N N		Sample Source Chlorinated (Yes/No)
	KA Nes		Lab Receipt Cl, Check <u>mcg</u> / <u>6-23-10</u>
	NA F		Lab Receipt pH Check
	A A		Preserved (Code)
		A=None B-HNO ₃ C-H ₂ SO ₄ D-NoOH E-HCL F-Na ₂ S ₂ O ₃ I=_____	
		COMMENTS:	
		Sample SET OUT @ 0855 6/21/10 TIME proportional B ₁ R+C AC 81016	
		pH 6.6 GRAB TAKEN + TEMP 27.4 READ @ 0900 ON 6/22/10 B ₁ R+C	
		KNOWN HAZARDS ASSOCIATED WITH SAMPLES	
		Temperature of blank or representative sample At time of collection <u>10.0</u> °C At time of lab receipt <u>3.2</u> °C	



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Laboratory Services Report

Client: Schlumberger Technology Corporation
Sangamo - Twelve Mile Creek Project
Attention Gary Odom by email

Date Received: 06/29/2010

South Carolina Laboratory Identification: 23105

Time Received: 11:45

North Carolina Laboratory Certificate Number: 27

Date Reported: 07/01/2010

NELAP Laboratory Identification: E87822

Sample Number

Sample Description



AC81342 Schlumberger Technology TMC Water Treatment Plant Effluent Discharge grab,
collected on 06/29/2010 at 09:05.



AC81343 Schlumberger Technology TMC Water Treatment Plant Effluent Discharge
composite, collected on 06/29/2010 at 09:00

The attached report is for the samples that were received and are referenced above. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements of the NELAC standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty available upon request.

We appreciate the opportunity to be of service to you. Please contact us at (864) 232-1556 should you have any questions about this report.

Results released by:

Anne Nomis
authorized signature

Results reviewed by:

MH

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<u>Sample Number</u>	<u>Sample Description, Date and Time Collected</u>						
<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Flag</u>	<u>RDL</u>	<u>Date/Time</u>	<u>Analyst</u>	<u>Method</u>
AC81342	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge grab, collected on 06/29/2010 at 09:05						
pH (Field)	6.3	pH units		0.1	06/29/2010 09:05	LRW	SM 4500HB
Temperature (Field)	26.9	degrees C		0.1	06/29/2010 09:05	LRW	SM 2550B
<u>Sample Number</u>	<u>Sample Description, Date and Time Collected</u>						
AC81343	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge composite, collected on 06/29/2010 at 09:00						
<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Flag</u>	<u>RDL</u>	<u>Date/Time</u>	<u>Analyst</u>	<u>Method</u>
24 hr Composite Sampling	Completed				06/29/2010 09:00	LRW	Composite
Total Suspended Solids	4.4	mg/l		2.0	06/29/2010 13:00	LBW	SM 2540D
Polychlorinated Biphenyls (PCBs)							
PCB-1016	< RDL	ug/l		0.5	06/30/2010 15:54	RKH	EPA 608
PCB-1221	< RDL	ug/l		0.5	06/30/2010 15:54	RKH	EPA 608
PCB-1232	< RDL	ug/l		0.5	06/30/2010 15:54	RKH	EPA 608
PCB-1242	< RDL	ug/l		0.5	06/30/2010 15:54	RKH	EPA 608
PCB-1248	< RDL	ug/l		0.5	06/30/2010 15:54	RKH	EPA 608
PCB-1254	< RDL	ug/l		0.5	06/30/2010 15:54	RKH	EPA 608
PCB-1260	< RDL	ug/l		0.5	06/30/2010 15:54	RKH	EPA 608
2,4,5,6-Tetrachloro-m-xylene, (Surrogate)	96	%		0	06/30/2010 15:54	RKH	EPA 608
Decachlorobiphenyl, (Surrogate)	93	%		0	06/30/2010 15:54	RKH	EPA 608
Liquid-Liquid Extraction Pest/PCB 608	Completed				06/29/2010 12:15	DBB	EPA 608



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Client Name Schium Bender

Address _____

Report To: _____

Telephone No. _____ FAX No. _____

PO No. _____ Project No. TMC

Rogers & Callcott Lab No.	Yr/ Date	Time	Sample Description
AC 81343	6/29	0900	WATER TREATMENT PLANT EFFLUENT DISCHARGE

SAMPLER Relinquished by (Sig.) <u>John May</u>	Date/Time 6/29/10 1145	Received by (Sig.) ② <u>John May</u> Shipper Name & #	Date/Time 6/29/10 1145	KNOWN HAZARDS ASSOCIATED WITH SAMPLES
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④	Date/Time	
Relinquished by (Sig.) ⑤	Date/Time	Received by (Sig.) ⑥	Date/Time	Temperature of blank or representative sample
Seal #	at'chd by <input type="radio"/>	Recvd. Intact by <input type="radio"/>	Seal #	At time of collection 5.6 °C
				At time of lab receipt 1:1 °C

Form Revised July 2008

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

Total Number of Containers 2	PARAMETERS	N N	Filtered (Yes/No)
		Y Y	Cooled (Yes/No)
		P G	Container Type (P/G)
		G 2 2 2	Container Volume
		C C	Sample Type (Grab/Composite)
		WW WW	Sample Source (WW, GW, DW, Other)
		N N	Sample Source Chlorinated (Yes/No)
		NA (no) neutral	Lab Receipt Cl. Check <u>mcg</u> 16-29-10
		A A	Lab Receipt pH Check
		TSS PCB	Preserved (Code) A=None D=NaOH G=Boric Acid B=HNO ₃ E=HCL H=Ascorbic Acid C=H ₂ SO ₄ F=Na ₂ S ₂ O ₃ I=—
COMMENTS: SAMPLE SET OUT @ 0900 6/29/10, TIME proportional by R+C AC 81342 pH 6.33 CRAB TAKEN & READ TEMP 26.9°C @ 0905 on 6/29/10 by R+C			

R/C COC FORM

ARCADIS

Attachment B

**Laboratory Services Report:
Whole Effluent Toxicity Testing**



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P.O. Box 5655, Greenville, SC 29606
Phone: (864) 232-1556 - FAX: (864) 232-6140

Laboratory Services Report

Client:

Schlumberger Technology Corporation
Sangamo - Twelve Mile Creek Project
Attention Gary Odom by email

Date Reported: 06/14/2010

South Carolina Laboratory Identification 23105
North Carolina Laboratory Certificate Number 27
NELAP Laboratory Identification E87822

Sample Number

Sample Description

	AC79953	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge composite, collected on 06/02/2010 at 09:10
	AC80182	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge composite, collected on 06/04/2010 at 08:15
	AC80183	Schlumberger Technology TMC Water Treatment Plant Effluent Discharge composite, collected on 06/05/2010 at 08:20

The attached report is for the samples that were received and are referenced above. Rogers and Callcott maintains a formal QA/QC program. Unless otherwise noted, all analyses performed under NELAP certification have complied with all the requirements of the NELAC standard. The analyses met the QA/QC confidence interval for each test method unless otherwise qualified. Estimated uncertainty available upon request.

We appreciate the opportunity to be of service to you. Please contact us at (864) 232-1556 should you have any questions about this report.

Results released by:

Army J Ashby
authorized signature

Results reviewed by:

SL

Carbon copy: Email to L Ketcham P Dougher A Kohler S Cary

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**ROGERS & CALLCOTT
LABORATORY SERVICES**

Case Narrative

AC79953 Schlumberger Technology TMC Water Treatment Plant Effluent Discharge composite, collected on 06/02/2010 at 09:10

Composite sample AC79953 was subcontracted to ETT for Acute and Chronic Toxicity tests.

AC80182 Schlumberger Technology TMC Water Treatment Plant Effluent Discharge composite, collected on 06/04/2010 at 08:15

This sample was an additional composite sample subcontracted to complete the Chronic Toxicity testing.

AC80183 Schlumberger Technology TMC Water Treatment Plant Effluent Discharge composite, collected on 06/05/2010 at 08:20

This sample was an additional composite sample subcontracted to complete the Chronic Toxicity testing.

<u>Sample Number</u>	<u>Sample Description, Date and Time Collected</u>						
<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Flag</u>	<u>RDL</u>	<u>Date/Time</u>	<u>Analyst</u>	<u>Method</u>
Subcontracted Sample Analysis	Completed				06/14/2010 00:00		

Analysis comment for Subcontracted Sample Analysis: See enclosed subcontract report which includes a total of 12 pages for Toxicity from ETT Environmental Inc.

<u>Sample Number</u>	<u>Sample Description, Date and Time Collected</u>						
<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Flag</u>	<u>RDL</u>	<u>Date/Time</u>	<u>Analyst</u>	<u>Method</u>
Subcontracted Sample Analysis	Completed				06/14/2010 00:00		

<u>Sample Number</u>	<u>Sample Description, Date and Time Collected</u>						
<u>Parameter</u>	<u>Result</u>	<u>Unit</u>	<u>Flag</u>	<u>RDL</u>	<u>Date/Time</u>	<u>Analyst</u>	<u>Method</u>
Subcontracted Sample Analysis	Completed				06/14/2010 00:00		



(864) 877-6942 . FAX (864) 877-6938

P.O. Box 16414, Greenville, SC 29606

Craftsman Court, Greer, SC 29650

June 8, 2010

Susan Gunter
Rogers & Callcott
PO Box 5655
Greenville, SC 29606

Dear Susan :

Please find enclosed the results of the most recent set of toxicity tests conducted for the Twelve Mile Creek Restoration Project. Composite samples were collected by Rogers and Callcott employees on June 2nd at 0910(AC79953), June 4th at 0815 (AC80182), and June 5th at 0820 (AC80183), 2010. The results included pertain only to the samples provided.

If you have any questions concerning the report, please give us a call. Thank you for allowing ETT Environmental to assist Rogers & Callcott with your biological monitoring requirements.

Sincerely,

A handwritten signature in black ink that reads "Bob Kelley".

Robert W. Kelley, Ph.D.
Laboratory Manager

Enclosure(s)



Test results presented in this report conform to all requirements of
NELAC, conducted under NELAC Certification Number B87819.
Florida Dept. of Health.



(864) 877-6942 . FAX (864) 877-6938

P.O. Box 16414, Greenville, SC 29608

Craftsman Court, Greer, SC 29650

**7 Day Chronic Definitive Survival
and Reproduction Bioassay**

Method: EPA-821-R-02-013 1002

Test Organism: *Ceriodaphnia dubia*

Facility: TWELVE MILE CREEK RESTORATION PROJECT
NPDES #: SC

02-Jun-10



South Carolina Department of Health
and Environmental Control

**DMR Attachment for Chronic
Multi-Concentration Whole Effluent
Toxicity Test Results using Linear Interpolation**

TWELVE MILE CREEK RESTORATION PROJECT Permit number SC
FINAL LIMIT 04/01/2010-

Parameter Code TCP3B

Discharge number
MLOC=1 CTC= 17.40% effluent

Monitoring period From:	Year	Month	Day	To	Year	Month	Day
	10	6	01		10	6	30

Date 02-Jun-10
Lab ID 23104

IC25= 67.57 %
48-hr Chronic LC50 = >100.0%

Group	Mortality Data		Reproduction Data	
	# Adults	# Dead	Group Average	Group Variance
0	10	0	24.2	62.84
8	10	0	24.6	52.49
17.4	10	1	21.7	64.68
35	10	0	22.9	30.10
50	10	0	20.9	53.88
100	10	1	13.5	25.83

% Survival Effect at CTC= 3.3%
% Reproduction Effect at CTC= 8.6%

Date 23104

IC25=
48 Hour Chronic LC50 =

Group	Mortality Data		Reproduction Data	
	# Adults	# Dead	Group Average	Group Variance
0				
8				
17.4				
35				
50				
100				

% Survival Effect at CTC=
% Reproduction Effect at CTC=

Signature of Principal Executive Officer or Authorized Agent _____
Name/Title of Principal Executive Officer (typed or printed) _____

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME TWELVE MILE CREEK RESTORATION PROJECT

ADDRESS

PICKENS COUNTY, SC

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

DISCHARGE MONITORING REPORT (DMR)

Form Approved:

OMB No. 2040-0004

MINOR

FACILITY TWELVE MILE CREEK RESTORATION PROJECT

LOCATION PICKENS COUNTY, SC

SC PERMIT NUMBER			DISCHARGE NUMBER		
MONITORING PERIOD					
YEAR	MO	DAY	YEAR	MO	DAY
FROM 10	6	01	TO 10	6	30

FINAL LIMITS

DMR VALID: 04/01/2010-

NOTE: Read Instructions before completing this form.

PARAMETER	SAMPLE	QUANTITY ORLOADING			QUANTITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE		
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM				UNITS	
TCP3B LAB ID: 23104 #Effect Statre 7Day Chr Ceriodaphnia MLOC=1	SAMPLE MEASUREMENT	*****	*****	*****	*****	8.6	8.6	0	1/90	24		
	PERMIT REQUIREMENT	*****	*****	*****	*****	25	40	PER-CENT	1/90	24		
TJP3B LAB ID: 23104 #Mortality 7Day Chr CERIODAPHNIA MLOC=1	SAMPLE MEASUREMENT	*****	*****	*****	*****	3.3	3.3	0	1/90	24		
	PERMIT REQUIREMENT	*****	*****	*****	*****	REPORT QRTR AVG	REPORT MAXIMUM	PER-CENT	1/90	24		
TWP3B LAB ID: 23104 # Repro Réduc Statre 7d Chr Ceriodaphnia MLOC=1	SAMPLE MEASUREMENT	*****	*****	*****	*****	8.6	8.6	0	1/90	24		
	PERMIT REQUIREMENT	*****	*****	*****	*****	REPORT QRTR AVG	REPORT MAXIMUM	PER-CENT	1/90	24		
	SAMPLE MEASUREMENT											
	PERMIT REQUIREMENT											
	SAMPLE MEASUREMENT											
	PERMIT REQUIREMENT											
	SAMPLE MEASUREMENT											
	PERMIT REQUIREMENT											
	SAMPLE MEASUREMENT											
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	PERMIT REQUIREMENT											
	SAMPLE MEASUREMENT											
	PERMIT REQUIREMENT											
	SAMPLE MEASUREMENT											
	PERMIT REQUIREMENT											
	SAMPLE MEASUREMENT											
	PERMIT REQUIREMENT											
NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I Certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.					SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		TELEPHONE	DATE			
TYPED OR PRINTED								ANSI CODE	JMBR	YEAR	MO	DAY
COMMENTS AND EXPLANATIONS OF ANY VIOLATIONS (Reference all attachments here)												
Chronic toxicity CEC=17.48 effluent												

CHRONIC DEFINITIVE SURVIVAL AND REPRODUCTION TEST

Statistical Analyses.

Client: TWELVE MILE CREEK RESTORATION PROJECT
 Sample Identification: Effluent
 Test Date: 02-Jun-10

Tests for Normality and Heterogeneity of Variance

Parameter	Test Used	Result	Critical Value
Normality	Kolmogorov D	D= 1.234	0.895
Variance	Bartlett's Test	B= 3.14	15.1
The data are normal in distribution.			
The data are homogeneous in variance.			

Sample Use

Sample Use	Days of Use
Sample A	Day 0,1
Sample B	Day 2,3
Sample C	Day 4,5,6

Tests for Differences in Survival and Reproduction

Test Type Used: Linear Interpolation

Effect	Control	8.0%	17.4%	35.0%	50.0%	100.0%
Survival	100%	100%	90%	100%	100%	90%
% reduction		0.0%	10.0%	0.0%	0.0%	10.0%
Reproduction	24.2	24.6	21.7	22.9	20.9	13.5
% reduction (smoothed)		0.0%	8.6%	8.6%	14.3%	44.7%
Variance	62.84	52.49	64.68	30.10	53.88	25.83

Acceptability Criteria	Value	Upper Limit	Lower Limit
CV:Coeff. of Variation	32.8%	42.0%	8.9%
PMSD: % MSD	27.6%	37.0%	11.0%
MSD:Min. Sign. Diff.	6.7	Acceptability criteria limits not exceeded	

IC25 Point Estimates

Survival IC25= > 100.0%

TEST RESULTS

% Reduction per Linear Interpolation

Reproduction IC25= 67.57 %

@ CTC of 17.4%

Hypothesis Testing

NOEC (Reproduction) 50.0%

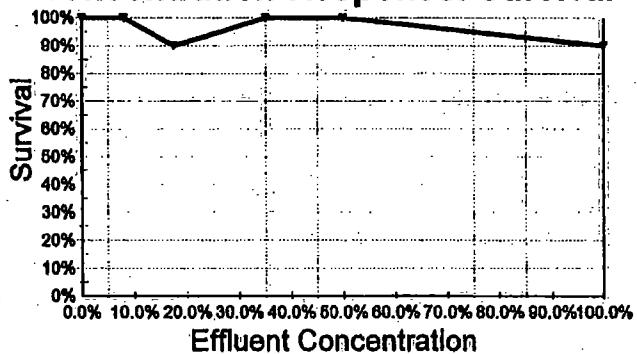
Survival effect 3.3%

ChV (Reproduction) 70.7%

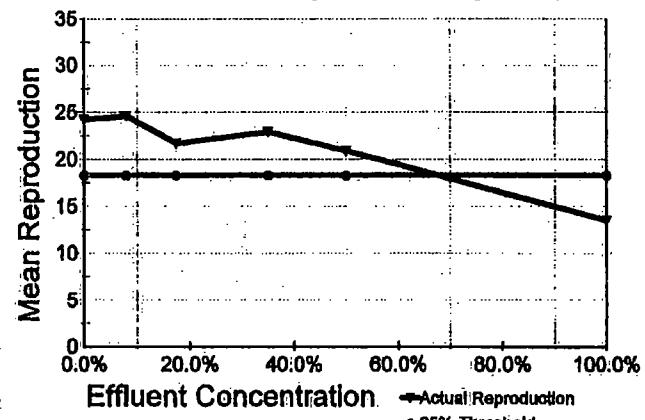
Reproduction effect 8.6%

Pass

Concentration-Response: Survival



Concentration-Response: Reproduction



Comments

		Test Day									
source	rep	1	2	3	4	5	6	7	8	Total	
FF4 5-21	A			0	5	10	0			15	
T10 5-21	B			0	6	9	14			29	
S1 5-21	C			0	4	0	9			13	
S8 5-21	D			0	6	11	13			30	
FF7 5-21	E			0	4	0	9			13	
P4 5-20	F			4	0	8	11			23	
A5 5-27	G			5	0	11	17			33	
P8 5-20	H			0	5	12	15			32	
A6 5-27	I			0	4	10	10			24	
N7 5-20	J			4	0	11	16			30	24.2
control											
8 %	A			0	4	13	0			17	
	B			0	5	11	14			30	
	C			0	4	12	0			16	
	D			0	6	12	14			31	
	E			0	6	7	0			13	
	F			0	0	5	16			21	
	G			4	0	9	15			28	
	H			6	0	11	15			32	
	I			0	5	12	15			32	Mean
	J			5	0	9	12			26	24.6
17.4 %	A			0	5	9	0			14	
	B			0	4	9	13			28	
	C			0	5	11	0			16	
	D			0	4	9	14			27	
	E			0	0	5	D			6	
	F			0	0	5	15			20	
	G			5	0	12	15			32	
	H			0	3	8	13			24	
	I			0	4	11	13			28	Mean
	J			4	0	9	12			25	21.7
35 %	A			0	4	8	11			23	
	B			0	6	10	14			30	
	C			0	4	10	0			14	
	D			0	3	8	12			23	
	E			0	5	0	10			15	
	F			0	1	6	12			19	
	G			6	0	9	16			30	
	H			3	0	10	12			25	
	I			0	5	9	11			25	Mean
	J			4	0	8	13			25	22.9
50 %	A			0	3	8	0			11	
	B			0	5	7	13			25	
	C			0	4	8	0			12	
	D			0	4	11	13			28	
	E			0	4	8	0			12	
	F			0	3	3	10			16	
	G			6	0	6	17			29	
	H			0	0	9	14			23	
	I			0	5	11	12			28	Mean
	J			5	0	8	12			26	20.9
100 %	A			0	4	7	0			11	
	B			0	4	5	0			9	
	C			0	3	0	6			9	
	D			0	3	4	0			7	
	E			0	4	6	8			18	
	F			0	0	3	13			16	
	G			0	1	5	11			17	
	H			4	0	5	13			22	
	I			0	3	6	D			9	Mean
	J			0	0	5	12			17	13.5
renew		AE	BB	BB	AE	JS				End Date	
fed		AE	BB	BB	AE	JS				08-Jun-10	
time fed & renew		12:15 PM	01:23 PM	10:13 AM	09:48 AM	10:00 AM				08:08 AM AE	
New temp. °C		25.4	24.8	24.7	25.6	25.4					
Old temp. °C		24.9	25.1	25.2	25.3	25.2	25.7				

D=Dead

N/A-Lost or not used

Lab#	T35422
Client	SCHLUMBERGER
Sample ID	EFFLUENT
NPDES#	SC
County	0
Month	6
Start & fed Date	8-2-10
Start & fed Time	1300
Started & fed By	AE
Test Organism	Ceriodaphnia dubia
Neo. born date	6/1/10
Neo. born time	BATCH 2
Test Type	SCCD
Dilution Water	MHSF
Unite for Conc.	%
%3rd BROOD	
Test vessels	30 ml
Test volume	15 ml
Incubator #	1
Light	16h/8dk
Initial Temp °C	25.4
Selenastrum	0.05 ml
YAT	0.05 ml
Test method	EPA 621-R-02-013:1002

Comments



ROGERS & CALLCOTT

LABORATORY SERVICES

P.O. Box 5655, Greenville, SC 29606
 Phone (864) 232-1556 Fax (864) 232-6140
 Shipping Address: 428 Fairforest Way
 Greenville, SC 29607

Client Name Rogers + CALLCOTT
 Address _____
 Report To: _____
 Telephone No. _____ FAX No. _____
 PO No. _____ Project No. TMC

Rogers & Callcott Lab No.	Yr <u>10</u> Date	Time	Sample Description	Total Number of Containers	PARAMETERS	TESTS										Preserved (Code)	
						ACUTE TOXICITY	CHLORINE	TOXICITY	PH	TEMP	CONDN	UV	PCP	PCP	PCP	PCP	
																	A
																	B-NaOH
																	C-H ₂ SO ₄
																	D-NaOH
																	E-HCl
																	F-H ₂ S ₂ O ₈
																	G-Boric Acid
																	H-Ascorbic Acid
																	I-

PAGE 1

CHAIN OF CUSTODY RECORD

N																	Filtered (Yes/No)
V																	Cooled (Yes/No)
P																	Container Type (P/G)
YG																	Container Volume
C																	Sample Type (Grab/Composite)
WW																	Sample Source (WW, GW, DW, Other)
																	Sample Source Chlorinated (Yes/No)
																	Lab Receipt Cl ₂ Check
																	Lab Receipt pH Check
																	Preserved (Code)
																	A-None
																	B-HNO ₃
																	C-H ₂ SO ₄
																	D-NaOH
																	E-HCl
																	F-H ₂ S ₂ O ₈
																	G-Boric Acid
																	H-Ascorbic Acid
																	I-
																	COMMENTS:
																	SAMPLE SET OUT @ 0910 35 ^o ON 6/1/10 TIME PROOF 35423 BY R+C

SAMPLER ① Relinquished by (Sig.) <u>Rogers + Callcott</u>	Date/Time 6/2/10 1108	Received by (Sig.) ② <u>K. McCallum</u> Shipper Name & #	Date/Time 6/2/10 1108	KNOWN HAZARDS ASSOCIATED WITH SAMPLES * DELIVERED TO ETT LAB
Relinquished by (Sig.) ③	Date/Time	Received by (Sig.) ④	Date/Time	
Relinquished by (Sig.) ⑤	Date/Time	Received by (Sig.) ⑥	Date/Time	Temperature of blank or representative sample
Relinquished by (Sig.) ⑦	Date/Time	Received by (Sig.) ⑧	Date/Time	At time of collection <u>31</u> °C
Seal # at chkd by Recvd. Intact by Seal # at chkd by Recvd. Intact by				At time of lab receipt <u>40</u> °C

R/C COC FORM

ROGERS & CALLCOTT
LABORATORY SERVICES

P.O. Box 5655, Greenville, SC 29606
Phone (864) 232-1556 Fax (864) 232-6140
Shipping Address: 426 Fairforest Way
Greenville, SC 29607

Client Name Rogers & Callcott

Address _____

Report To: _____

Telephone No.: _____ FAX No.: _____

PO No. _____ Project No. TMC

Rogers & Callcott Lab No.	Y/ Date	Time	Sample Description	Total Number of Containers						
				1	2	3	4	5	6	7
35428	6/4	0815*	WATER TREATMENT plant EFFLUENT DISCHARGE	1						

SAMPLER Relinquished by (Sig.) <u>John M. Miller</u>	Date/Time 6/4/00 10:21	Received by (Sig.) <u>John M. Miller</u> Shipper Name & #	Date/Time 6/4/00 10:21		
Relinquished by (Sig.) <u>③</u>	Date/Time	Received by (Sig.) <u>④</u> Shipper Name & #	Date/Time		
Relinquished by (Sig.) <u>⑤</u>	Date/Time	Received by (Sig.) <u>⑥</u> Shipper Name & #	Date/Time		
Seal #	at chd by <input type="radio"/>	Revd. Intact by <input type="radio"/>	Seal #	at chd by <input type="radio"/>	Revd. Intact by <input type="radio"/>

Form Revised July 2008

CHAIN OF CUSTODY RECORD

PAGE 1 +

<input checked="" type="checkbox"/> N	<input type="checkbox"/> Y	<input type="checkbox"/> C	<input type="checkbox"/> G	<input type="checkbox"/> W	<input type="checkbox"/> H	<input type="checkbox"/> I	<input type="checkbox"/> J	<input type="checkbox"/> K	<input type="checkbox"/> L	<input type="checkbox"/> M	<input type="checkbox"/> P	<input type="checkbox"/> R	<input type="checkbox"/> S	<input type="checkbox"/> T	<input type="checkbox"/> U	<input type="checkbox"/> V	<input type="checkbox"/> W	<input type="checkbox"/> X	<input type="checkbox"/> Y	<input type="checkbox"/> Z
Filtered (Yes/No)																				
Cooled (Yes/No)																				
Container Type (P/G)																				
Container Volume																				
Sample Type (Grab/Composite)																				
Sample Source (WW, GW, DW, Other)																				
Sample Source Chlorinated (Yes/No)																				
Lab Receipt Cl. Check																				
Lab Receipt pH Check																				
Preserved (Code)																				
A-None D-NaOH G-Boric Acid B-HNO ₃ E-HCl H-Ascorbic Acid C-H ₂ SO ₄ F-Na ₂ S ₂ O ₃ I- —																				
COMMENTS: Sample sent out 6/4/00 at 10:21 AM prop. by R&C																				
KNOWN HAZARDS ASSOCIATED WITH SAMPLES DELIVERED TO ETT LAB																				
Temperature of blank or representative sample																				
At time of collection <u>30</u> °C																				
At time of lab receipt <u>14</u> °C																				

R/C COC FORM



ROGERS & CALLCOTT

LABORATORY SERVICES

P.O. Box 5855, Greenville, SC 29606
 Phone (864) 232-1556 Fax (864) 232-6140
 Shipping Address: 426 Fairforest Way
 Greenville, SC 29607

Client Name Rogers & CALLCOTT

Address _____

Report To: _____

Telephone No. _____ FAX No. _____

PO No. _____ Project No. TMC

Rogers & Callcott Lab No.	Yr/ Date	Time	Sample Description	Total Number of Containers		
				PARAMETERS	A	B
AC 80183	6/5	0820	* WATER TREATMENT PLANT EFFLUENT DISCHARGE	1	1	

SAMPLER Relinquished by (Sig.) <u>①</u>	Date/Time 6/5/10 0820	Received by (Sig.) <u>②</u> <i>Patricia</i> Shipper Name & #	Date/Time 6/5/10 0845
Relinquished by (Sig.) <u>③</u>	Date/Time	Received by (Sig.) <u>④</u> Shipper Name & #	Date/Time
Relinquished by (Sig.) <u>⑤</u>	Date/Time	Received by (Sig.) <u>⑥</u> Shipper Name & #	Date/Time
Seal # <input type="checkbox"/> attached by <input type="radio"/> Recvd. Intact by <input type="radio"/> Seal # <input type="checkbox"/> attached by <input type="radio"/> Recvd. Intact by <input type="radio"/>			

CHAIN OF CUSTODY RECORD

PAGE 0-1

N	V	Filtered (Yes/No)
P	C	Cooled (Yes/No)
S	C	Container Type (P/G)
W	N	Container Volume
A	A	Sample Type (Grab/Composite)
		Sample Source (WW, GW, DW, Other)
		Sample Source Chlorinated (Yes/No)
		Lab Receipt Cr. Check
		Lab Receipt pH Check
		Preserved (Code)
		A=None D=NaOH G=Boric Acid B=HNO ₃ E=HCl H=Ascorbic Acid C=H ₂ SO ₄ F=Na ₂ S ₂ O ₃ I=—
		COMMENTS:
		35420C <i>Sample set at 0820 on 6/5/10 Time 0845 by R+C</i>
		KNOWN HAZARDS ASSOCIATED WITH SAMPLES <i>* DELIVERED TO ETL LAB</i>
		Temperature of blank or representative sample At time of collection <u>32</u> °C At time of lab receipt <u>40</u> °C



**DMR Attachment for Pass/Fail
Whole Effluent Toxicity Test Results**

TWELVE MILE CREEK RESTORATION PROJ Permit number SC
FINAL LIMITS 4/01/2010-

Discharge number
Parameter Code TAA3B MLOC=1 35.5% effluent

Monitoring period
From

Year	Month	Day
10	6	01

Year	Month	Day
10	6	30

Mortality Data - Acute and Chronic Tests

Reproduction Data-Chronic Tests Only

Date 02-Jun-10
Lab ID 23104

Group	# Adults	# Dead	Pass/Fail	Average	Variance	Pass/Fail
Control	20	0	Pass			
Test	20	0				

Mortality Data - Acute and Chronic Tests

Reproduction Data-Chronic Tests Only

Date
Lab ID

Group	# Adults	# Dead	Pass/Fail	Average	Variance	Pass/Fail
Control						
Test						

Mortality Data - Acute and Chronic Tests

Reproduction Data-Chronic Tests Only

Date
Lab ID

Group	# Adults	# Dead	Pass/Fail	Average	Variance	Pass/Fail
Control						
Test						

Mortality Data - Acute and Chronic Tests

Reproduction Data-Chronic Tests Only

Date
Lab ID

Group	# Adults	# Dead	Pass/Fail	Average	Variance	Pass/Fail
Control						
Test						

Mortality Data - Acute and Chronic Tests

Reproduction Data-Chronic Tests Only

Date
Lab ID

Group	# Adults	# Dead	Pass/Fail	Average	Variance	Pass/Fail
Control						
Test						

Mortality Data - Acute and Chronic Tests

Reproduction Data-Chronic Tests Only

Date
Lab ID

Group	# Adults	# Dead	Pass/Fail	Average	Variance	Pass/Fail
Control						
Test						

Signature of Principal Executive Officer or Authorized Agent _____

Name/Title of Principal Executive Officer (typed or printed) _____

DHRC 3420 (8/05)

STATISTICAL ANALYSIS RESULTS

Facility:	TWELVE MILE RESTORATION PROJECT	NPDES#	SC
Sample ID:	EFFLUENT	ETT#	T35423
Laboratory:	E.I.T Environmental, Inc.	Certification #:	23104

Survival Data			
	48 Hrs. Survival	Test Used:	Fisher's Test
Control	100%	Test Statistic:	P= 1.000
Effluent	100%	Critical Value:	P= 0.05
PASS: The effluent does not reduce survival of the test organisms.			

Control Survival and Reproduction by Test Day										
source	rep	1	2	3	4	5	6	7	8	Total
W2 5-21	A		0							0
A7 5-27	A		0							0
M7 5-20	A		0							0
BB10 5-21	A		0							0
Random	A		0							0
	B		0							0
	B		0							0
	B		0							0
	B		0							0
	B		0							0
	C		0							0
	C		0							0
	C		0							0
	D		0							0
	D		0							0
	D		0							0
	D		0							0
	D		0							0
	D		0							0
										Mean: 0.0

35.6 % Effluent Survival and Reproduction by Test Day										
source	rep	1	2	3	4	5	6	7	8	Total
W2 5-21	A		0							0
A7 5-27	A		0							0
M7 5-20	A		0							0
BB10 5-21	A		0							0
Random	A		0							0
	B		0							0
	B		0							0
	B		0							0
	B		0							0
	B		0							0
	C		0							0
	C		0							0
	C		0							0
	C		0							0
	D		0							0
	D		0							0
	D		0							0
	D		0							0
	D		0							0
										Mean: 0.0

DATE:	04-Jun-10
TIME:	03:48 PM BB
Temp. °C:	
Old temp. °C:	

D=Dead N/A-Lost or not used

09:03 AM

Lab#	T36423
Client	TWELVE MILE RES
Sample ID	EFFLUENT
NPDES#	SC
County	0
Month	6
Start & fed Date	6-2-10
Start & fed Time	1448
Started & fed By	JG
Test Organism	Centropages dubia
Nec. born date	6-1-10
Nec. born time	BATCH:2
Test Type	SCAPF
Dilution: Water	MHSF
Units for Conc.	%
IWG	35.5
% 3rd BROOD	
Test vessels	30 ml
Test volume	15 ml
Incubator #	1
Light	16L/8Dk
Initial Temp °C	24.8
Benthastrium	0.05 ml
VAT	0.05 ml
Test method	EPA 821-R-02-013:1002

Comments
ORGANISMS FED AT 1230



ROGERS & CALLCOTT

LABORATORY SERVICES

P.O. Box 5555, Greenville, SC 29606
 Phone (864) 232-1556 Fax (864) 232-6140
 Shipping Address: 426 Fairforest Way
 Greenville, SC 29607

Client Name Rogers + CALLCOTT
 Address _____
 Report To: _____
 Telephone No. _____ FAX No. _____
 PO No. _____ Project No. TMC

Rogers & Callcott Lab No.	Yr/ Date	Time	Sample Description	Total Number of Containers	PARAMETERS	ACUTE TOXICITY			Preserved (Code)
						N	Y	P	
AC 19953	6/2	0910	WATER TREATMENT PLANT * EFF. DISCHARGE	1	A				A-None B-HNO ₃ C-H ₂ SO ₄ D-NaOH E-HCL F-Na ₂ S ₂ O ₃ I-

SAMPLER Relinquished by (Sig.) <u>Roger + Callcott</u>	Date/Time 6/2/10 1108	Received by (Sig.) <u>Hector M. Diaz</u> Shipper Name & #	Date/Time 6/2/10 1108	KNOWN HAZARDS ASSOCIATED WITH SAMPLES * DELIVERED TO ETT LAB
Relinquished by (Sig.) <u>Roger + Callcott</u>	Date/Time 6/2/10 1150	Received by (Sig.) <u></u> Shipper Name & #	Date/Time	
Relinquished by (Sig.) <u>Roger + Callcott</u>	Date/Time 	Received by (Sig.) <u></u> Shipper Name & #	Date/Time	Temperature of blank or representative sample At time of collection <u>31</u> °C At time of lab receipt <u>40</u> °C
Seal # at chd by <input type="radio"/> Recvd. Intact by <input type="radio"/>	Seal # at chd by <input type="radio"/> Recvd. Intact by <input type="radio"/>			R/C COC FORM



ROGERS & CALLCOTT

LABORATORY SERVICES

P.O. Box 5655, Greenville, SC 29608
 Phone (864) 232-1556 Fax (864) 232-6140
 Shipping Address: 426 Fairforest Way
 Greenville, SC 29607

Client Name Rogers & Callcott

Address _____

Report To: _____

Telephone No. _____ FAX No. _____

PO No. _____ Project No. JMC

Rogers & Callcott Lab No.	YR/ Date	Time	Sample Description	Total Number of Containers	PARAMETERS		Preserved (Code)
					Chloride	Toxicity	
AC 80162	6/4	0815*	MARITIMENT plant EFFLUENT DISCHARGE	1	1		

SAMPLER Relinquished by (Sig.) <u>Stephanie</u>	Date/Time 6/4/10 10:20	Received by (Sig.) <u>Karen</u> Shipper Name & #	Date/Time 6/4/10 10:20	KNOWN HAZARDS ASSOCIATED WITH SAMPLES * DELIVERED TO ETT LAB
Relinquished by (Sig.) <u>⑤</u>	Date/Time	Received by (Sig.) <u>④</u> Shipper Name & #	Date/Time	Temperature of blank or representative sample
Relinquished by (Sig.) <u>⑤</u>	Date/Time	Received by (Sig.) <u>⑥</u> Shipper Name & #	Date/Time	At time of collection _____ °C
Seal # <input type="radio"/> at'chd by <input type="radio"/> Recvd. Intact by <input type="radio"/>	Seal # <input type="radio"/> at'chd by <input type="radio"/> Recvd. Intact by <input type="radio"/>			At time of lab receipt _____ °C

Form Revised July 2008

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R/C COC FORM

Filtered (Yes/No)

Cooled (Yes/No)

Container Type (P/G)

Container Volume

Sample Type (Grab/Composite)

Sample Source (WW, GW, DW, Other)

Sample Source Chlorinated (Yes/No)

Lab Receipt Cl. Check

Lab Receipt pH Check

Preserved (Code)

A=None
B-HNO₃
C-H₂SO₄D-NaOH
E-HCLG-Boric Acid
H-Ascorbic Acid
F-Na₂S₂O₃ I-COMMENTS:

*SAMPLE SET OUT CODE IS
ON OPTIO, TIME prop.
by R&C*



ROGERS & CALLCOTT

LABORATORY SERVICES

P.O. Box 5855, Greenville, SC 29606
 Phone (864) 232-1556 Fax (864) 232-6140
 Shipping Address: 426 Fairforest Way
 Greenville, SC 29607

Client Name Rogers & Callcott

Address _____

Report To: _____

Telephone No. _____

FAX No. _____

PO No. _____

Project No. TMC

Rogers & Callcott Lab No.	Yr/ Date	Time	Sample Description
AC 80183	6/5	0820	* WASTEWATER TREATMENT PLANT EFFLUENT DISCHARGE

SAMPLER
 Relinquished by (Sig.)
 ① Rogers

Date/Time
 6/5/01 0845

Received by (Sig.)
 ② Patk
 Shipper Name & #

Date/Time
 6/5/01 0845

KNOWN HAZARDS ASSOCIATED WITH SAMPLES
 * DELIVERED TO ETT-LAB

Relinquished by (Sig.)
 ③

Date/Time

Received by (Sig.)
 ④
 Shipper Name & #

Date/Time

Relinquished by (Sig.)
 ⑤

Date/Time

Received by (Sig.)
 ⑥
 Shipper Name & #

Date/Time

Temperature of blank or representative sample

At time of collection 3.2 °CAt time of lab receipt 4.0 °C

Seal # at'chd by ○ Recvd. Intact by ○ Seal # at'chd by ○ Recvd. Intact by ○

Form Revised July 2008

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

Total Number of Containers A	N	Filtered (Yes/No)
	✓	Cooled (Yes/No)
	PI	Container Type (P/G)
	SC	Container Volume
	C	Sample Type (Grab/Composite)
	NN	Sample Source (WW, GW, DW, Other)
	N	Sample Source Chlorinated (Yes/No)
		Lab Receipt Cl. Check
		Lab Receipt pH Check
		Preserved (Code) A-None D-NaOH G-Boric Acid B-HNO ₃ E-HCL H-Ascorbic Acid C-H ₂ SO ₄ F-Na ₂ S ₂ O ₃ I-
COMMENTS:		
Sample set at 0820 on 6/5/01, Time phys. by R+C		

R/C COC FORM

ARCADIS

Attachment 3

Weekly Construction Photo Log

Period: Week ending 7/04/2010



Progress of Protective Layer.

Period: Weeks ending 7/11/2010 and 7/18/10



Progress of Protective layer, Larger equipment.



Initiation of 6th water treatment train.



Dredge "Kami" working at around Sta 40+00.

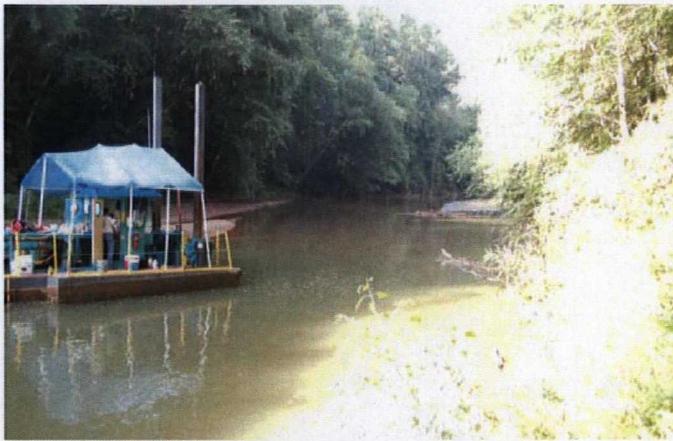


Removing solids from Geo Tube 1.



Re-graded GeoTube pad number 1.

Period: Week ending 7/25/2010



Dredge Kami advancing to Station 43+00.



Geotube material management.



Carbon Filter media change out.

Period: Week ending 8/01/2010



Larger shaker units on Clare's Deltank.



Adding new GAC to lag carbon vessel.



Overall progress of SMU.